

## Explorer Post 632: BalloonSat

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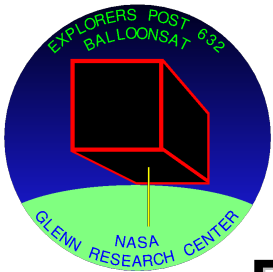
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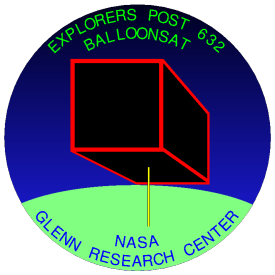




## Building 302

- **Rest rooms:** front Hall, first & second floor
- **Emergency Exit:**
  - 911 from office phones,
  - (216)433-8888 from cell phone
  - If possible, leave front of building
  - Get UPWIND
    - **Poison gas may be in use in some laboratories**
  - Meet in front of the building across the road (west)
- **Break room: 208**
  - Snacks available ~\$1 snack and pop
  - Cost is low so Please don't abuse the privilege
- **This is a Work Place, not a playground**
  - Don't go into offices uninvited
  - Unless told otherwise: **DO NOT TOUCH!!**

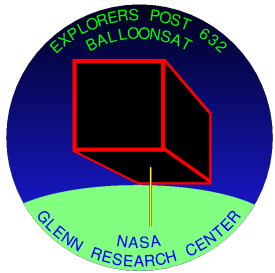




### Balloon Lift

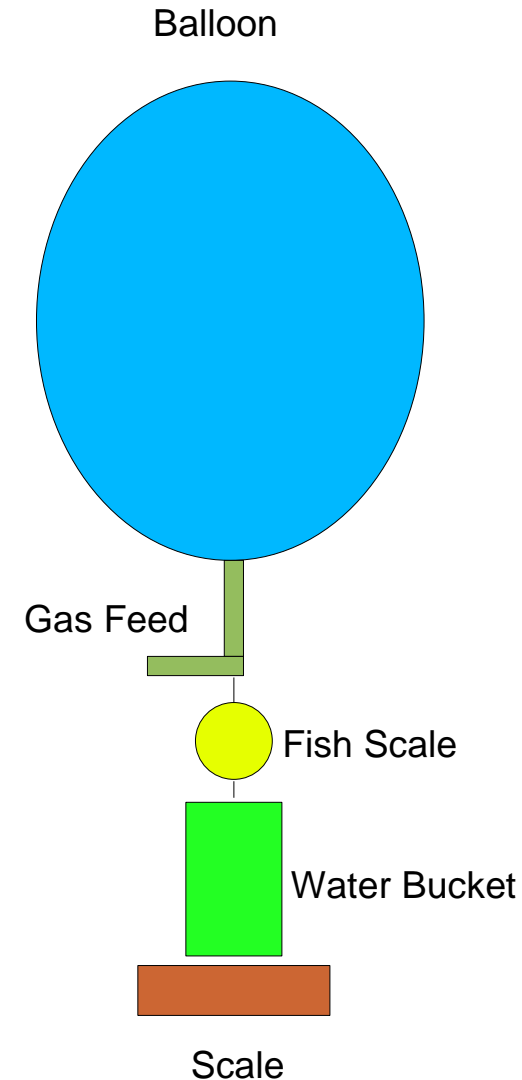
- Balloon lift Determines:
  - Payload Capacity
    - More lift, more payload
    - Need ~2.5 kg
  - Rise Rate
    - More lift, faster rise rate
    - 1.2 kg lift, ~1000 ft/min, 100 min rise time
  - Maximum Altitude
    - For 1500gr Balloon to reach 105 kft
    - Lift 3.8 kg

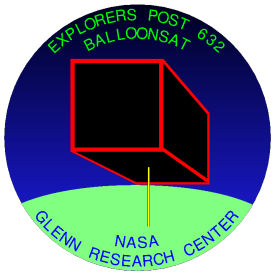




## Balloon Inflation

- Calculate total lift
  - Payload + FreeLift
- Subtract
  - Gas feed (180 gr)
  - Fish Scale (135 gr)
- Fill Water bucket with water to this weight.
- Inflate Balloon till bucket is lifted from ground + *add a little more.*



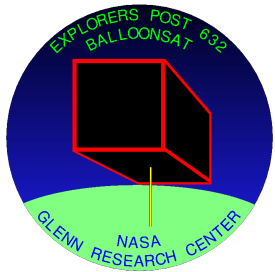


### Balloon Inflation

- Do not touch balloon with bare hands.
  - Only those with latex gloves may touch balloon.
  - Use *BIG HANS* to control balloon.
- Be careful not to release balloon.
- When balloon is filled
  - Tie neck w string
  - Fold neck
  - Tie and tape



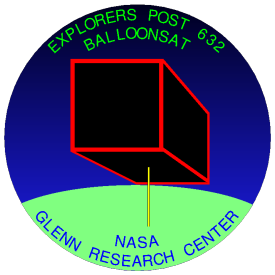




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### Wind Release

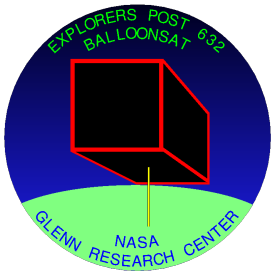




### Calm Release

- Slowly raise balloon
  - Foot – by - foot
  - Payload – by – Payload
- Hang onto last payload
- Release after countdown





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### Project for next week

- Find a weather forecast for Tiffin, OH for next Saturday morning (Oct 21).
  - TV, radio, newspaper
  - <http://www.weather.com>
  - <http://www.weatherunderground.com>
- We would like as much information as we can get – cloud cover, temperature, winds, etc.

